

In the Claims:

1. (previously amended) A float system for use with a rotation motor that rotates a rotatably-supported body, the rotation motor having first and second ports for receiving and discharging pressurized media supplied from a source thereof, the float system comprising:

a valve interposed between a first media line connected to the first port of the rotation motor and a second media line connected to the second port of the rotation motor; and

a control mechanism including a manual actuation mechanism operatively coupled with the valve for selectively switching the valve between a closed position wherein the first and second media lines are substantially isolated from one another and an open position wherein the first and second media lines are in communication with one another to allow for reducing a pressure differential between the first and second ports of the rotation motor, wherein the manual actuation mechanism allows for selectively switching the valve without regard to the magnitude of the pressure differential.

2. (original) The float system as set forth in claim 1, wherein the rotational float system places the rotation motor in a float condition that permits the rotatably-supported body to rotate toward a side load when the valve is in the open position.

3. (original) The float system as set forth in claim 1, the valve comprising a pair of poppet-type valves in fluid communication with one another between the first and second media lines.

4. (original) The float system as set forth in claim 1, the valve comprising a blocking valve interposed between the first and second media lines.

5. (original) The float system as set forth in claim 1, the control mechanism comprising a switch for electrically controlling switching of the valve between the closed and the open positions.

6. (original) The float system as set forth in claim 1, the pressurized media comprising hydraulic fluid.

7. (original) The float system as set forth in claim 1, further including a tilt switch operatively coupled with the control mechanism for preventing the control mechanism from switching the valve to the open position whenever the rotatably-supported body is tilted in excess of a predetermined slope.

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β 8. (original) The float system as set forth in claim 1, further including an indicator operatively coupled with the control mechanism for indicating when the control mechanism has switched the valve to the open position.

9. (original) The float system as set forth in claim 8, the indicator including an audible alarm or a visible alarm.

10. (original) The float system as set forth in claim 1, further including an electrical relay interposed between the control mechanism and the valve.

11. (original) The float system as set forth in claim 1, further including a flow control device positioned in-line with the valve for controlling a rate at which the valve allows equalization of pressure between the first and second ports of the rotation motor when the valve is switched to the open position.

12. (previously amended) A rotation drive mechanism for driving a rotatably-supported body which is subject to undesirable side loads, the drive mechanism comprising:

- ✓ a rotation motor having first and second ports for receiving and discharging pressurized media supplied from a source thereof;
- a drive linkage coupled between the rotation motor and the rotatably-supported body;
- a first media line for delivering pressurized media to and discharging pressurized media from the first port of the rotation motor;
- a second media line for delivering pressurized media to and discharging pressurized media from the second port of the rotation motor; and
- a float system operable to place the rotation motor in a float condition to allow the rotatably-supported body to rotate toward a side load, the float system including -
 - a valve interposed between the first and second media lines, and
 - a control mechanism including a manual actuation mechanism operatively coupled with the valve for selectively switching the valve between a closed position wherein the first and second media lines are substantially isolated from one another and an open position wherein the first and second media lines are in communication with one another to allow for reducing a pressure differential between the first and second ports of the rotation motor, wherein the manual actuation mechanism allows for selectively switching the valve without regard to the magnitude of the pressure differential.

13. (original) The rotation drive mechanism as set forth in claim 12, the valve comprising a pair of poppet-type solenoid valves in fluid communication with one another between the first and second media lines.

14. (original) The rotation drive mechanism as set forth in claim 12, the valve comprising a blocking valve interposed between the first and second media lines.

15. (original) The rotation drive mechanism as set forth in claim 12, the control mechanism comprising a switch for electrically controlling switching of the valve between the closed and the open positions.

16. (original) The rotation drive mechanism as set forth in claim 12, the pressurized media comprising hydraulic fluid.

17. (original) The rotation drive mechanism as set forth in claim 12, further including a tilt switch operatively coupled with the control mechanism for preventing the control mechanism from switching the valve to the open position whenever the body is tilted in excess of a predetermined slope.

18. (original) The rotation drive mechanism as set forth in claim 12, further including an indicator operatively coupled with the control mechanism for indicating when the control mechanism has switched the valve to the open position.

19. (original) The rotation drive mechanism as set forth in claim 18, the indicator including an audible alarm or a visible alarm.

20. (original) The rotation drive mechanism as set forth in claim 12, further including an electrical relay interposed between the control mechanism and the valve.

21. (original) The rotation drive mechanism as set forth in claim 12, further including a flow control device positioned in-line with the valve for controlling a rate at which the valve allows equalization of pressure between the first and second ports of the rotation motor when the valve is switched to the open position.

22. (previously added) A float system for reducing a side load in a rotation motor adapted to rotate a boom structure, the rotation motor having first and second ports for receiving and discharging a pressurized media, the float system comprising:

a valve operatively interposed between the first and second ports; and

a control mechanism including a manual actuation mechanism operatively coupled with the valve for selectively switching the valve between a closed position wherein the first and second ports are substantially isolated from one another and an open position wherein the first and second ports are in communication with one another to allow for reducing a pressure differential of the pressurized media between the first and second ports of the rotation motor, wherein the manual actuation mechanism allows for selectively switching the valve without regard to the magnitude of the pressure differential.

23. (previously added) The float system as set forth in claim 22, wherein when the valve is open the media is allowed to flow between the first and second ports, the float system further including a regulator mechanism adapted to passively limit a flowrate of the pressurized media between the first and second ports.

24. (previously added) The float system as set forth in claim 23, wherein the regulator mechanism is an orifice having dimensions that restrict and limit the flowrate to a predetermined maximum value.

25. (previously added) The float system as set forth in claim 22, further including a tilt switch adapted to substantially automatically disable the control mechanism when the boom structure is positioned on an incline at least equal to a predetermined slope, thereby preventing selective switching of the valve.

26. (previously added) A system for reducing a side load in a rotation motor adapted to rotate a boom structure, the rotation motor having first and second ports for receiving and discharging a pressurized media, the float system comprising:

a side load protection system adapted to substantially automatically allow the pressurized media to flow between the first and second ports when a pressure differential of the pressurized media between the first and second ports exceeds a predetermined magnitude; and

a float system including a manual actuation mechanism adapted to selectively allow the pressurized media to flow between the first and second ports without regard to the magnitude of the pressure differential.

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27. (previously added) The system as set forth in claim 26, further comprising a regulator mechanism adapted to passively limit a flowrate of the pressurized media between the first and second ports.

28. (previously added) The system as set forth in claim 27, wherein the regulator mechanism is an orifice having dimensions that restrict and limit the flowrate to a predetermined maximum value.

29. (previously added) The system as set forth in claim 26, further including a tilt switch adapted to substantially automatically disable the float system when the boom structure is positioned on an incline at least equal to a predetermined slope.

30. (previously added) An improved apparatus having a rotatable boom structure driven by a rotation motor and including a side load protection system, the rotation motor having first and second ports for receiving and discharging a pressurized media, and the side load protection system being adapted to substantially automatically allow the pressurized media to flow between the first and second ports when a pressure differential of the pressurized media between the first and second ports exceeds a predetermined magnitude, the improvement comprising:

a float system including a manual actuation mechanism adapted to selectively allow the pressurized media to flow between the first and second ports without regard to the magnitude of the pressure differential.

31. (withdrawn) A method of reducing a side load in a rotation motor adapted to rotate a boom structure, the rotation motor having first and second ports for receiving and discharging a pressurized media, the method comprising the steps of:

- (a) allowing, substantially automatically, the pressurized media to flow between the first and second ports when a pressure differential of the pressurized media between the first and second ports exceeds a predetermined magnitude; and
- (b) providing a manually actuatable mechanism for selectively allowing the pressurized media to flow between the first and second ports without regard to the magnitude of the pressure differential.

32. (withdrawn) The method as set forth in claim 31, further including the step of passively limiting a flowrate of the pressurized media between the first and second ports.

33. (withdrawn) The method as set forth in claim 31, further including the step of disabling the manually actuatable mechanism when the boom structure is positioned on an incline at least equal to a predetermined slope.

34. (new) In a rotation drive mechanism for driving a rotatably-supported body which

is subject to undesirable side loads, the rotation drive mechanism having

- ✓ a rotation motor having first and second ports for receiving and discharging pressurized media supplied from a source thereof,
- ✓ a drive linkage coupled between the rotation motor and the rotatably-supported body,
- ✓ a first media line for delivering pressurized media to and discharging pressurized media from the first port of the rotation motor,
- ✓ a second media line for delivering pressurized media to and discharging pressurized media from the second port of the rotation motor, and
- ✓ a first control mechanism that is manually actuatable to control driving of the rotatably-supported body by the rotation motor,

wherein the improvement comprises:

a float system operable to place the rotation motor in a float condition to allow the rotatably-supported body to rotate toward a side load, the float system including -

a valve interposed between the first and second media lines, and

a second control mechanism including a manual actuation mechanism operatively coupled with the valve for selectively switching the valve between a closed position wherein the first and second media lines are substantially isolated from one another and an open position wherein the first and second media lines are in communication with one another to allow for reducing a pressure differential between the first and second ports of the rotation motor, wherein the manual actuation mechanism allows for selectively switching the valve without regard to the magnitude of the pressure differential.